

CONDUCTANCE-VOLTAGE (GV) BASED METHOD FOR DETERMINING LEAKAGE CURRENT IN DIELECTRICS

ABSTRACT OF THE DISCLOSURE

A leakage current of a dielectric overlaying a semiconductor wafer can be determined by moving a conductive probe into contact with the dielectric and applying an electrical stimulus, in the form of a fixed amplitude, fixed frequency AC voltage superimposed on a DC voltage which is swept from a starting voltage towards an ending voltage, between the probe tip and the semiconductor wafer. Conductance values associated with the dielectric and the semiconductor wafer can be determined from phase angles between the AC voltage and an AC current resulting from the applied AC voltage during the sweep of the DC voltage. The leakage current of the dielectric can then be determined from the thus determined conductance values.